

12 EUROPEAN PATENT APPLICATION

21 Application number: 81302414.8

51 Int. Cl.³: G 09 F 13/08
 G 09 F 13/02, G 09 F 13/34
 //G09F11/26

22 Date of filing: 01.06.81

30 Priority: 02.06.80 JP 76464/80
 07.11.80 JP 160047/80
 04.02.81 JP 14761/81

43 Date of publication of application:
 09.12.81 Bulletin 81/49

84 Designated Contracting States:
 DE FR GB

71 Applicant: Yamashita, Toshiro
 4-5-1-302, Sendagaya Shibuya-ku
 Tokyo(JP)

72 Inventor: Yamashita, Toshiro
 4-5-1-302, Sendagaya Shibuya-ku
 Tokyo(JP)

74 Representative: Freed, Arthur Woolf et al,
 MARKS & CLERK 57-60 Lincoln's Inn Fields
 London WC2A 3LS(GB)

54 Advertisement display apparatus.

57 An advertisement display apparatus having a combination of a front advertisement display plate (3) and a rear advertisement display plate (8) positioned adjacent the rear side of the front advertisement display plate (3).

The front advertisement display plate (3) may be made of an opaque member having a multiplicity of small apertures formed, preferably uniformly at a constant pitch, over one surface (1) thereof and provided on the outer surface thereof with an advertisement display pattern (2) such as letters, figures, signs, patterns or combinations thereof. Alternatively, the front advertisement display plate (28) is made of a transparent member provided with a multiplicity of opaque patches or spots (26) formed on the one surface thereof and having an advertisement display pattern such as letters, figures, signs, patterns or combinations thereof.

The rear advertisement display plate (8) may be made of a transparent or translucent member provided with an advertisement display pattern (7) such as letters, figures, signs, patterns or combinations thereof. The rear advertisement display plate (8) can also have a form of an elongated sheet adapted to be driven reciprocatingly or an endless sheet (17) adapted to be driven intermittently in one direction.

The apparatus further has independent front and rear illuminating means (18,18a,19,19a) for illuminating the front and rear advertisement display plates (3,8) under the control

of a light controlling device.

This apparatus enables various patterns of advertisement display to be obtained on a single apparatus.

FIG.1



ADVERTISEMENT DISPLAY APPARATUS

The present invention relates to an advertisement display apparatus and, more particularly, to an advertisement display apparatus having a combination of a front display plate and a rear display plate each having an advertisement display pattern provided thereon, the display plates being adapted to be illuminated selectively to present various advertisement displays.

Hitherto, there have been various types of advertisement display apparatus capable of presenting various advertisement displays by a single unit.

For instance, such an advertisement display apparatus is known as having a plurality of display plates which are automatically and selectively driven to and from the visible position by a suitable driving means. Another known apparatus employs a plurality of neon tubes which are turned on selectively to provide a large variety of display patterns. It is also known to use a movie film for projecting a moving image on a screen. Still another type of advertisement display apparatus employs an endless display belt carrying a plurality of advertisement display patterns and adapted to be driven at a predetermined speed.

- 2 -

These known advertisement display apparatus, however, can provide only comparatively monotonous changes of display pattern. The apparatus employing the movie film, which seems to provide a comparatively flexible change of pattern, requires
5 a large installation space because it is necessary to provide a considerable distance between the movie projector and the screen.

It is, therefore, an object of the present invention to provide an improved advertisement display apparatus which mitigates
10 the above described problems of the prior art.

According to the present invention, there is provided an advertisement display apparatus having a combination of advertisement display plates characterised in that the apparatus comprises a front advertisement display plate and a rear advertisement
15 display plate, said front advertisement display plate being formed of a plurality of relatively transparent areas and a plurality of relatively opaque areas and provided with an advertisement display pattern such as letters, figures, signs, patterns or combinations thereof provided on the outer
20 surface thereof, said rear advertisement display plate provided with advertisement display pattern such as letters, figures, signs, patterns or combinations thereof, said rear advertisement display plate being positioned adjacent the rear side of said front advertisement display plate; and front and rear

- 3 -

illumination means adapted to illuminate said front and rear advertisement display plates respectively and selectively and independently, the distribution and ratio of the relatively transparent to the relatively opaque areas being such that
5 the advertisement display pattern of the rear display plate can be recognisably distinguished through the front display plate, when illuminated by the rear illumination means.

Preferably the advertisement display apparatus comprises a front advertisement display plate made of an opaque material
10 and having a multiplicity of small apertures distributed evenly over the entire surface thereof and provided on its outer surface with an advertisement display pattern such as letters, figures, signs, patterns or combinations thereof, or a front advertisement display plate made of a transparent
15 material and having a multiplicity of small opaque patches adhered to the outer surface thereof and having an advertisement display pattern such as letters, figures, signs, patterns or combinations thereof; a rear advertisement display plate made of a transparent or milk-white translucent material
20 and provided on its inner surface with an advertisement display pattern such as letters, figures, signs, patterns or combinations thereof, or a movable elongated sheet, said rear advertisement display plate or said movable elongated sheet being disposed at the rear side of the front advertisement display plate
25 to form, in combination with the latter, an advertisement

- 4 -

display plate unit which is installed substantially at the central portion of a frame; and illuminating means for illuminating the front advertisement display plate and the rear advertisement display plate or the elongated sheet selectively and independently of each other.

Embodiments of the present invention will now be described, by way of example only and with reference to the accompanying drawings; in which:

Figure 1 is a schematic front elevational view of an advertisement display apparatus constructed in accordance with a first embodiment of the invention;

Figure 2 is a schematic side elevational view of the advertisement display apparatus shown in Figure 1;

Figure 3 is a schematic horizontal sectional view of the advertisement display apparatus shown in Figure 1;

Figure 4 is an enlarged schematic side elevational view of the advertisement display apparatus, showing particularly how a front advertisement display plate and a rear advertisement display plate are assembled in the apparatus shown in Figure 1;

- 5 -

Figure 5 is an enlarged front elevational view of a part of the advertisement display apparatus, showing particularly how the front advertisement display plate and the rear advertisement display plate are assembled in the apparatus shown in Figure 1, with a part of the latter being omitted;

Figure 6 is a schematic front elevational view of an advertisement display apparatus constructed in accordance with a second embodiment of the invention;

Figure 7 is a schematic side elevational view of the advertisement display apparatus shown in Figure 6;

Figure 8 is an enlarged schematic front elevational view of the advertisement display apparatus shown in Figure 7, showing particularly how a front advertisement display plate and a rear advertisement display plate are assembled, with a part of the apparatus being omitted;

Figures 9 to 12 are enlarged front elevational views of the advertisement display apparatus of the invention, showing particularly various patterns of opaque parts of the front advertisement display plate;

Figures 13 and 14 are side elevational views of different embodiments;

- 6 -

Figure 15 is a schematic perspective view of an embodiment in which a front transparent plate is combined with a front advertisement display plate, rear advertisement display plate and a milk white translucent plate which are shown in Figure 1;

Figure 16 is a schematic perspective view of another example of combination of the front advertisement display plate and rear advertisement display plate; and

Figure 17 is a schematic sectional side elevational view showing how the front advertisement display plate and rear advertisement display plate shown in Figure 16 are assembled on a frame.

Referring first to Figures 1 to 5 showing a first embodiment of the invention, a front advertisement display plate (referred to simply as "front plate", hereinafter) designated by a reference numeral 3 is made of an opaque material of a thickness ranging between 0.1 mm and 1 mm, such as a black semi-hard synthetic resin, paper or the like. An advertisement display pattern 2 such as letters, figures, signs or combinations thereof is provided on the outer surface 1 of the front plate 3. The front plate 3 is further provided with a multiplicity of small apertures 5 formed therein at a constant pitch of about 1.5 to 2.0 mm as measured at the centres of the apertures.

A rear advertisement display plate 8 (referred to simply as "rear plate", hereinafter) is made of a transparent or white translucent material, and is provided thereon with an opaque or coloured advertisement display pattern 7 such as letters, figures, signs or combinations thereof. The rear plate 8 is disposed at the rear side of the front plate 3 and is secured to the latter thereby to form an advertisement display plate unit (referred to simply as "plate unit", hereinafter). The plate unit is mounted substantially at the centre of a frame 4 of the advertisement display apparatus. As stated before, the aperture usually has a diameter ranging between 1.0 mm and 1.5 mm although the diameter can be varied within a range of between 0.5 mm and 5 mm. The ratio of the area occupied by the apertures to the area other than the apertures falls within a range of between 30:70 and 40:60. Front illumination lamps 18, 18a and rear illumination lamps 19, 19a are adapted to illuminate the front plate 3 and the rear plate 8, respectively, under the control of a light control device 20.

The rear plate 8 can be substituted by a thin rear advertisement display sheet adapted to be moved reciprocatingly by an electric motor 21 through the operation of driving rolls 9, 10. Alternatively, it is possible to use, in place of the rear plate 8, an endless rear advertisement display sheet 17 constituted by a series of unit sheets carrying different display patterns, adapted to be driven in one direction by a drive roll 11, along guide rolls 12, 13, 14 and 15, as shown in Figure 13.

- 8 -

Figure 14 shows another arrangement which constitutes a different embodiment in which the rear plate 8 is replaceably attached to guide frames 16,16a attached to the rear side of the front plate 3.

- 5 If a timer (not shown) is incorporated in the circuit of the electric motor 21 mentioned above, it is possible to drive or move the rear plate or sheet intermittently by a predetermined distance.

- 10 Various forms of the rear plate or sheet explained above can apply also to the front plate. Namely, the front plate may be constructed in such a manner as to be able to move reciprocatingly, or may be formed as an endless sheet consisting of a plurality of unit sheets having different display patterns and adapted to be moved in one direction through a driving
- 15 roll by an electric motor under the control of a timer. It is possible also to construct the front plate such that it can be replaceably fitted in a guide frame. By adopting such arrangements, it is possible to obtain various combinations of display patterns of the front and rear plates or sheet.

- 20 In the first embodiment of the invention having the described construction, as the front illumination lamps 18,18a are turned on; only the advertisement display pattern 2 on the front plate is illuminated and becomes clearly visible in

- 9 -

the direction of arrow A in Figure 2, as illustrated in Figure

1. In contrast, if the front illumination lamps 18,18a are
turned off while the rear illumination lamps 19,19a are put
on, only the advertisement display pattern 7 on the inner
5 surface of the rear plate 8 is distinguishably recognizable
in the direction of arrow A through the apertures 5 of the
front plate 3. Thus, when both of the front and rear illumination
lamps 18,18a, 19,19a are put on simultaneously, both of the
display patterns 2 and 7 are observed from the front side
10 of the frame 4, as shown by arrow A, in a superimposed manner,
although the superimposed patterns are not shown in the drawings.

Therefore, by controlling the brightness of the front and
rear illumination lamps 18,18a, and 19,19a as desired and
in relation to time, such that for example, lamps 18,18a
15 of the front and rear illumination lamps 18,18a, 19,19a are
gradually and linearly brightened while the other lamps 19,19a
are gradually dimmed by a suitable light control means 20
(see Figure 2), while varying the combination between the
advertisement display patterns on the front and rear plates,
20 it is possible to obtain a plurality of advertisement patterns
displayed on a single advertisement display apparatus in
quite an easy and simple manner.

Figures 6 and 7 show a second embodiment of the invention
in which, in place of the front plate 3 having a multiplicity

- 10 -

of small apertures dispersed uniformly as used in the first embodiment, a front panel 28 having the following construction is used to form, in combination with the rear plate 8, the plate unit which is mounted at the central portion of the frame 4. Namely, the front plate 28 of this embodiment is made of a transparent material on the surface of which are formed a multiplicity of minute opaque spots or patches 26 by opaque ink or the like material, uniformly at a constant pitch. In addition, the front plate 28 is provided thereon with an advertisement display pattern 27 such as letters, figures, signs or combinations thereof formed by printing. In this case, the ratio between opaque area and the transparent area generally ranges between 75:25 and 65:35.

In this operation, when the front illumination lamps 18,18a are turned on, only the advertisement display pattern 27 is illuminated and the light is reflected as shown by arrow 29, so that those who looks at the front side of the advertisement display apparatus see the display image as if it contains only the advertisement display pattern 27. Then, as the illumination lamps 19,19a are turned on while the lamps 18,18a are turned off, the light emitted from the lamps 19,19a passes through only the transparent portions of the outer surface of the rear plate and is interrupted by the advertisement display pattern 7 on the latter, as represented by an arrow 30. The advertisement display pattern 7, therefore, can be distinctively

- 11 -

recognised from the front side of the advertisement display apparatus, i.e. in the direction of arrow A, as will be understood from Figure 8.

The size and shape of the opaque portion 26 of the front plate 28 can be selected as desired in accordance with the nature of the advertisement display pattern to be printed, to provide different ratios of area between the transparent portion and opaque portion, and to provide various forms such as rectangular form 31, linear form 32, staggered form 33, spiral form 34 and so forth, as shown in Figures 9 to 12.

Needless to say, various arrangements described before in connection with the construction of the rear plate 8 can directly apply to the front plate 28 of this embodiment, as in the case of the front plate 3 of the first embodiment.

The plate 28 having transparent and opaque portions formed on the surface of a transparent member is advantageous as compared with the plate 8 having small apertures formed in an opaque member in that it permits an easy selection of the forms of configurations of the transparent and opaque portions and permits an easy minute treatment.

Referring now to Figure 16, a front advertisement display

- 12 -

plate 38 has a transparent plate member 35 on the outer surface of which printed is an advertisement pattern 36 consisting of letters, figures, signs or combinations thereof in such a manner as to leave blank transparent portions. In addition,
5 a multiplicity of small opaque portions of regular size are printed on portions of the inner surface of the transparent plate member 35 other than the above-mentioned transparent portions, by means of an opaque ink or the like.

In some cases, the front advertisement display plate 38 may
10 be formed by at first printing on the inner surface of the transparent plate member 35 the advertisement pattern 36 in such a manner as to leave transparent portions, printing a multiplicity of opaque portions 37 of a regular size on the portions other than the transparent portions by means
15 of a white ink, and printing opaque portions by means of a black ink on the opaque portions formed by the white ink.

On the other hand, a rear advertisement display plate 41 has a milk white translucent plate material. An advertisement display 40 such as letters, figures, signs or combinations
20 thereof is printed either on the inner side or outer side of the milk white translucent plate 39.

These front advertisement display plate 38 and the rear advertisement display plate 41 are assembled together to form a plate unit

- 13 -

which is mounted, as shown in Figure 17, on the central part of a frame 44 having front illumination lamps 42,42a and rear illumination lamps 43,43a. It will be seen by those skilled in the art that this arrangement provides an advertisement display apparatus having a simple construction and capable of presenting a more beautiful and attractive advertisement display.

Thanks to the use of the milk white transparent plate member, the light from the lamps is suitably diffused and the lamps are concealed advantageously.

It is possible to use, as the material of the front plate 3, a sheet-like member which has black or other dark colour on one side and metallic aluminum colour on the other side. This material affords a more distinctive and beautiful presentation of advertisement display patterns because it reflects the light at a higher efficiency. Similarly, in the front plate 28 of the second embodiment, the opaque portion may be formed by an evaporation of aluminum. In such a case, the opaque portion exhibits a bright metallic lustre to increase the brightness of the display surface and, hence, the effect of the advertisement display.

As has been described, the advertisement display apparatus of the invention offers a great advantage in display of two or

- 14 -

more kinds of advertisement display patterns by a single apparatus, over the conventional display apparatus.

CLAIMS

1. An advertisement display apparatus having a combination of advertisement display plates (3,8) characterised in that the apparatus comprises a front advertisement display plate (3) and a rear advertisement display plate (8), said front advertisement display plate (3) being formed of a plurality of relatively transparent areas and a plurality of relatively opaque areas and provided with an advertisement display pattern (2) such as letters, figures, signs, patterns or combinations thereof provided on the outer surface thereof, said rear advertisement display plate (8) provided with advertisement display pattern (7) such as letters, figures, signs, patterns or combinations thereof, said rear advertisement display plate (8) being positioned adjacent the rear side of said front advertisement display plate (3); and front and rear illumination means (18,18a,19,19a) adapted to illuminate said front and rear advertisement display plates (3,8) respectively and selectively and independently, the distribution and ratio of the relatively transparent to the relatively opaque areas being such that the advertisement display pattern (7) of the rear display plate (8) can be recognisably distinguished, through the front display plate (3), when illuminated by the rear illumination means (19,19a).

2. An advertisement display apparatus as claimed in claim 1, characterised in that the rear display plate (8) is formed

- 16 -

of a transparent or translucent member.

3. An advertisement display apparatus as claimed in claim 1 or 2, characterised in that the front advertisement display plate (3) is formed of an opaque member having a plurality of apertures passing therethrough.

4. An advertisement display apparatus as claimed in claim 1 or 2, characterised in that the front advertisement display plate (28) is formed of a transparent member provided with a plurality of opaque patches or spots (26) provided on a surface (1) thereof.

5. An advertisement display apparatus as claimed in any preceding claim, characterised in that the rear advertisement display plate (8) is adapted to be driven reciprocatingly.

6. An advertisement display apparatus as claimed in any of claims 1 to 4, characterised in that the rear advertisement display plate (8) has the form of an endless sheet (17) which is adapted to be driven and which comprises a plurality of unit sheets connected in series and each having different advertisement display patterns thereon.

7. An advertisement display apparatus as claimed in claim 6, characterised in that the endless sheet (17) is adapted

- 17 -

to be driven intermittently in one direction under control of a timer.

8. An advertisement display apparatus as claimed in claim 4, characterised in that each opaque patch or spot (31) on the front advertisement display plate (28) has a rectangular form.

9. An advertisement display apparatus as claimed in claim 4, characterised in that each opaque patch or spot (32) on the front advertisement display plate (28) has a linear form.

10. An advertisement display apparatus as claimed in claim 4, characterised in that the opaque patches or spots (33) on the front advertisement display plate (28) are arranged in a staggered manner.

11. An advertisement display apparatus as claimed in claim 4, characterised in that opaque patches or spots (34) on the front advertisement display plate (28) are arranged in a spiral form.

FIG.1



FIG.2

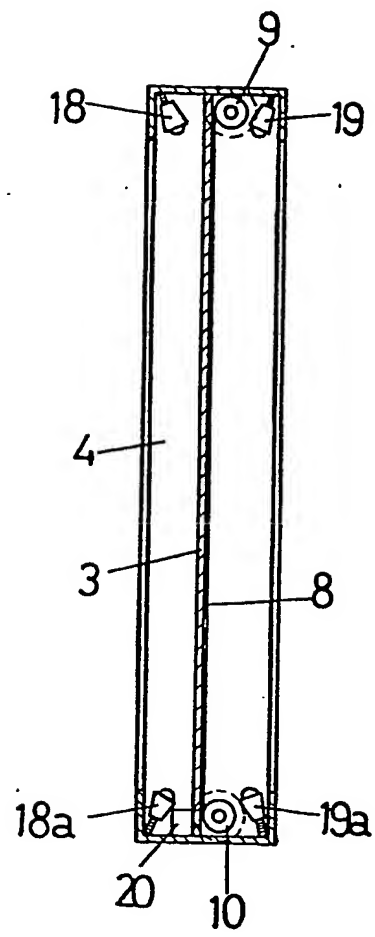


FIG. 3

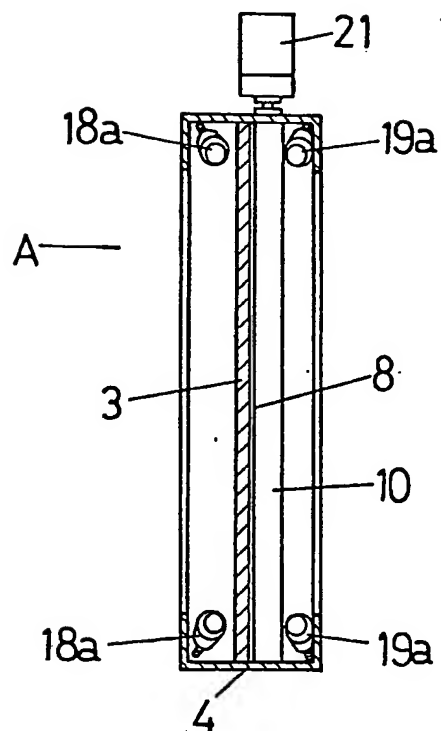


FIG. 4

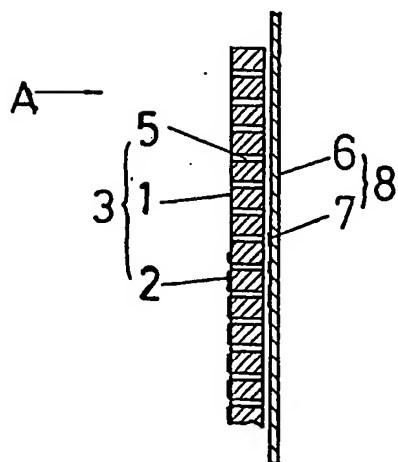


FIG. 5

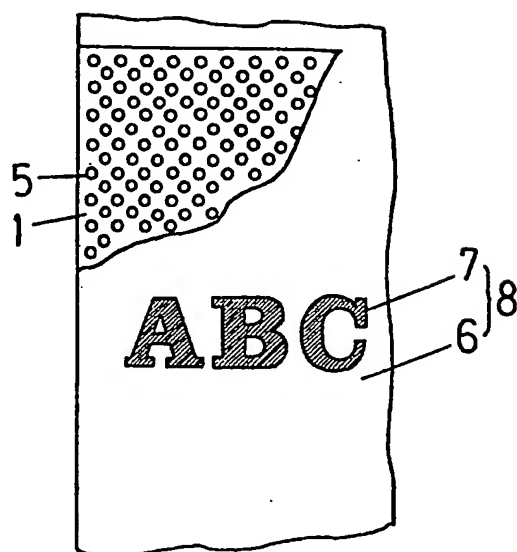


FIG. 6

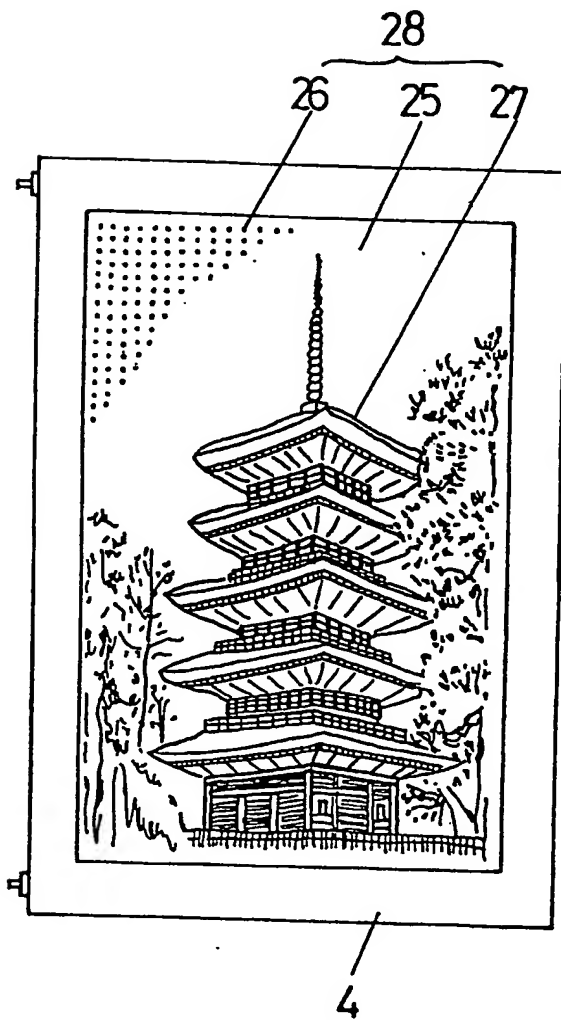


FIG. 7

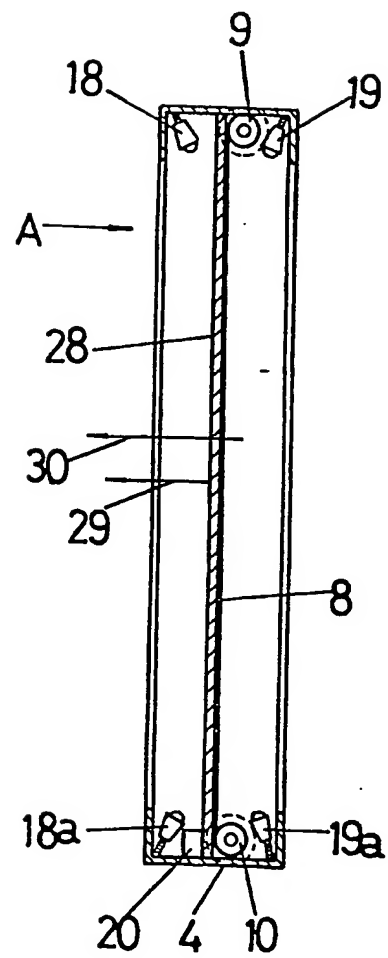


FIG. 8

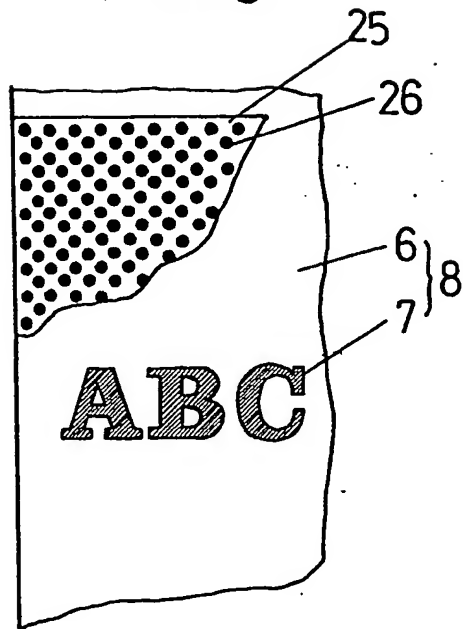


FIG. 9

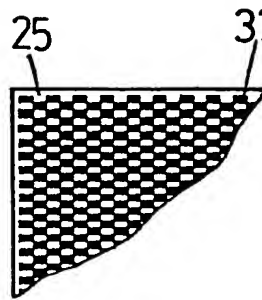


FIG. 10

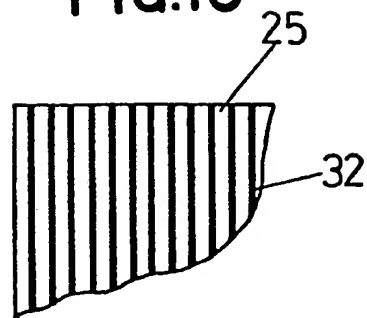


FIG. 11

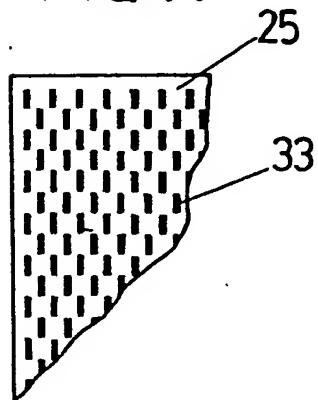


FIG. 12

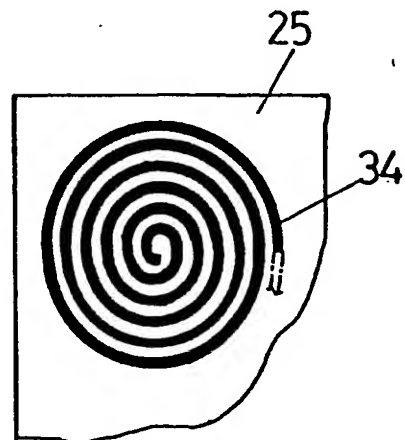


FIG.13.

FIG.14

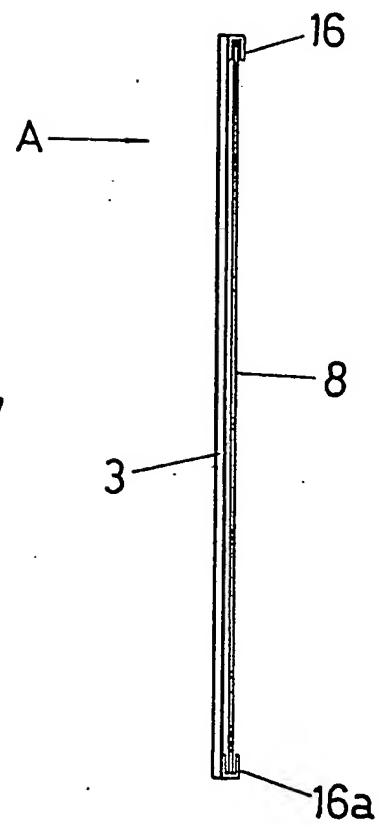
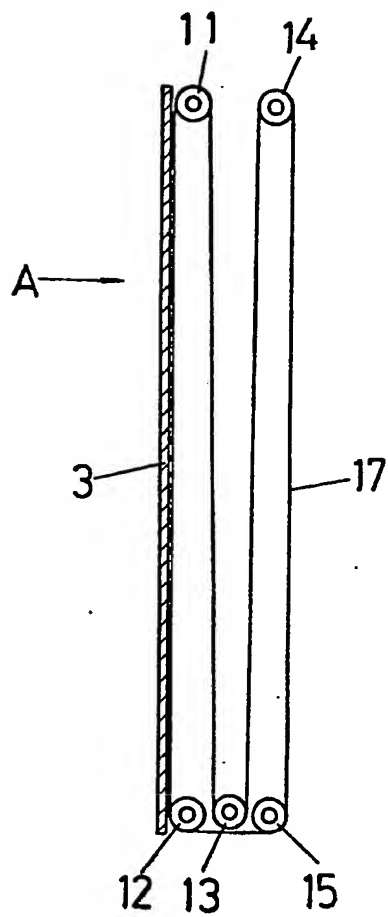


FIG.15

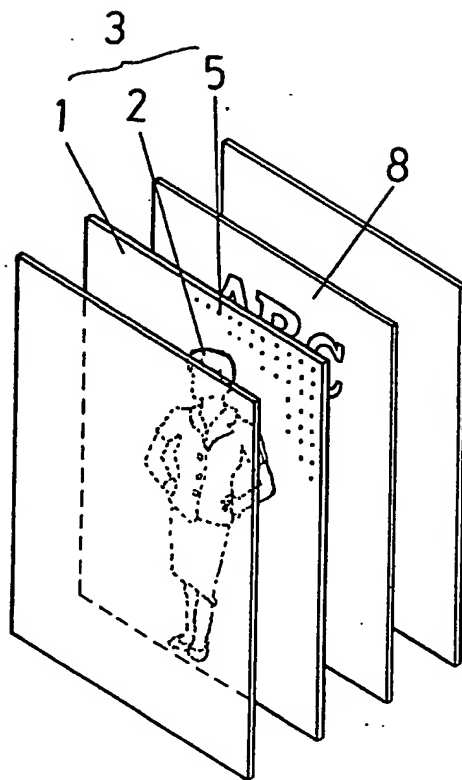


FIG.16

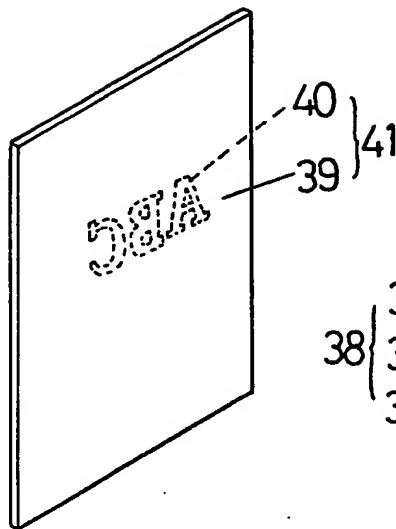
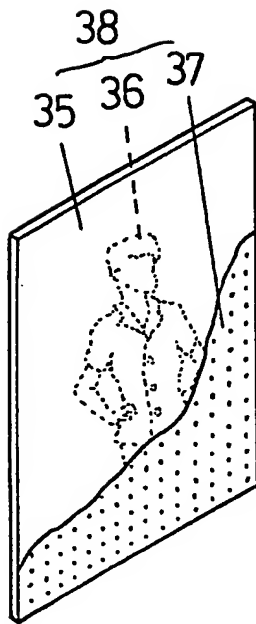
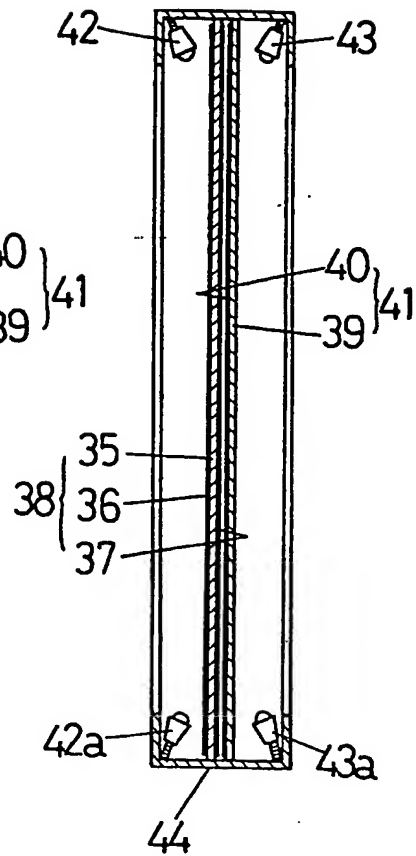


FIG.17





European Patent
Office

EUROPEAN SEARCH REPORT

0041390

Application number

EP 81 30 24.14

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	<u>FR - A - 1 102 518</u> (M. PAUL ZUCKERMAN) * Abstract; page 1, left-hand column, last but one paragraph - right-hand column, paragraph 6; figures 1,2 * --	1-3	G 09 F 13/08 13/02 13/34// 11/26
X	<u>FR - A - 1 317 940</u> (B. AMOURIQ and G. HAMOIGNON) * Abstract 1-3,6,8; page 2, left-hand column, last paragraphs - page 3, right-hand column, paragraph 6; page 4, left-hand column, paragraph 3; figures 3-5,11,15 * --	1,4,5, 8-10.	TECHNICAL FIELDS SEARCHED (Int. Cl.)
X	<u>US - A - 2 223 685</u> (LESTER E. HERBERGER) * Claims 1,2; page 2, right-hand column, line 49 - page 3, right-hand column, line 7, figures 5-8 * ----	1-3	G 09 F 13/08 13/06 13/12 13/10 13/00 13/32 13/34 11/26
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search The Hague		Date of completion of the search 15-09-1981	Examiner FRANSEN